

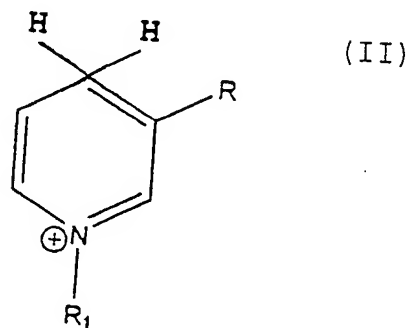
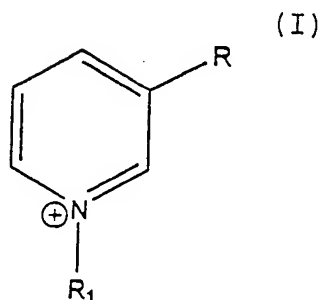
In the Claims

1-3. (canceled).

4. (Original) A device for replacement or regeneration of NAD(P)⁺/NAD(P)H system in oxido-reductive processes comprising

- a) a polymer matrix;
- b) a catalyst precursor;
- c) a co-factor; and
- d) an enzyme.

5. (Currently amended) The device of claim 4 wherein the co-factor is NAD⁺, NADP⁺ or a biomimic compound of the formula I or II

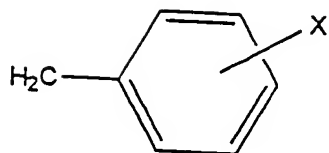


wherein R is -CN, -C(O)NH₂, -C(O)NHCH₃, -C(S)NH₂, -C(O)CH₃ or

$-C(O)OCH_3$;

wherein R_1 is $-(CH_2(CH_2O)_n YR_2, \text{ribose}-Y-R_2$

or



wherein Y is $-OPOO-$, $-OBO_2-$, $-OSO_2-$, CH_3NH- , $-(CH_2)_nNH-$, adenine, or imidazole;

wherein R_2 is H, CH_3 , $-(OCH_2CH_2)_n R_3$, $-(NCH_2CH_2)_n [-] R_3$ or $-[N=P(OCH_3)_2]_n R_3$;

wherein X is $-OCH_3$, $-CF_3$, $-O(CH_2CH_2O)_n R_3$ or $-OPOOR_2 R_3$;

wherein R_3 is H, or $-CH_3$, $-(OCH_2CH_2)_n$, $-(NCH_2CH_2)_n$ or $-[N=P(OCH_3)_2]_n$;

wherein n is 1-2000

or a salt thereof.

6. (Original) The device of claim 5 wherein the co-factor is the biomimic used for replacement of $NAD(P)^+/NAD(P)H$ system.

7. (Original) The device of claim 6 wherein the biomimic is in combination with its 1,4 reduced derivative.

8. (Original) The device of claim 7 wherein the catalyst precursor is rhodium, zinc, nickel, cobalt, iridium or ruthenium comprising complex.

9. (Original) The device of claim 8 where the catalyst precursor is rhodium comprising complex.

10. (Original) The device of claim 9 wherein the catalyst precursor is $[\text{Cp}^*\text{Rh}(\text{bpy})(\text{H}_2\text{O})]$ triflate salt.

11. (Original) The device of claim 8 additionally comprising a reducing agent.

12. (Original) The device of claim 11 wherein the reducing agent is formate, hydrogen, sodium borohydride, hydroquinone, sodium borohydrate, and electrode or a photon.

13. (Original) The device of claim 14 wherein the enzyme is oxidase or reductase.

14-17. (Canceled)

18. (Original) A catalyst precursor comprising rhodium, iridium, zinc, cobalt, nickel or ruthenium.